AIRDRIE • BEISEKER • BIGHORN • BLACK DIAMOND
BLACKIE • CALGARY • CANMORE • CAYLEY
CHESTERMERE LAKE • CLUNY • COCHRANE • CROSSFIELD
FOOTHILLS • GHOST LAKE • GLEICHEN • HIGH RIVER • HUSSAR
I.D. #8 • IRRICANA • LONGVIEW • OKOTOKS • ROCKY VIEW • ROCKYFORD
STANDARD • STRATHMORE • TURNER VALLEY • WAIPAROUS • WHEATLAND

Prospect '91

Inside this Issue:
Recreation Trends in the Calgary Region

Calgary Regional Planning Commission
June 1991

Prospect 1991
Recreation Report for the Calgary Region

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EXECUTIVE SUMMARY

- The prime determinants of recreation activity growth over the next decade will be population growth and aging.

- Growth in outdoor activity is expected to follow patterns established in the 1980s.

- Unstructured, relatively passive activities will continue to be more popular than structured, more vigorous team sports.

- Activities likely to experience the highest growth rate are summer activities, specifically natural environment based and general recreation activities. Examples of unstructured outdoor activities that will continue to be popular are walking and bicycling. Examples of general recreation activities are pleasure driving and picnicking.

- These trends are leading to an emphasis on maintenance and expansion of open space for recreation use, including linear pathway systems for bicycling and walking. Pathways are usually developed beside river valleys, highways, or other existing features.

- There may be increasing pressure to develop natural areas for recreational purposes.

- Planning of larger open space systems between municipalities will require cooperation among private interest groups and municipal and provincial governments.

Prospect 1991:

RECREATION REPORT FOR THE CALGARY REGION

INTRODUCTION

This report in the Prospect series examines outdoor recreation activity growth over the coming ten year period. It focuses on the effects of the two largest determinants of recreation activity - population growth and age structure.[1] This discussion is meant to provide information for policy makers in the fields of outdoor recreation, the environment, land use, and tourism in the Calgary region.

Several difficulties were encountered during the course of this research. Firstly, due to a lack of consistent historical data regarding recreation participation, participation trends could not be examined prior to 1980. Secondly, because recreation forecasting is speculative in nature, few studies attempt to predict future growth of recreation activities.

However, despite these difficulties a review of recreation literature revealed several general trends. Section 2 discusses these trends as well as expected growth in recreation activities. The growth rates are based on the current popularity of various activities, population projections for the region, and the typical effects of aging.

The third section of this paper discusses the implications these trends have for recreation, land use and environmental planning, as well as local tourism development strategies.

The concluding section summarizes issues and opportunities discussed in this paper.

RECREATION TRENDS

Regional Population Growth and Aging

Population growth and aging will affect recreation activity over the next ten years. Firstly, as the region's population grows more people will be available to participate in recreation activities. Secondly, as a large proportion of the region's population becomes older it is likely that recreation activity participation rates will decrease. Studies indicate that a person's age is the largest determinant of participation in activities and that participation generally decreases as people become older.[2] In addition to these two factors, the recreation preferences of the baby boom generation will affect the popularity of recreation activities over the next decade. This section examines all of these factors to provide an indication of general outdoor recreation trends in the region.

To examine growth of the region's total population over the next decade, a medium growth projection is used.[3] According to projection 1 the region's total population will increase from 772,975 in 1990 to 989,597 by the year 2001, at an average annual growth rate of 2.2%. Table 1 summarizes historical and projected growth rates in the Calgary region. Although population growth will be slower than in the past, there will be an increase in the number of people available to participate in recreation activities. The majority of population growth will occur in Calgary and the region's smaller urban centres.

Table 1
Population Growth in the Calgary Region
1961-2001

Year	Population	Average Annual Growth (%)
1961	278,718[1]	
		5.7
1971	436,244[1]	
		5.1
1981	660,099	
		2.2
1991	806,247[2]	
		2.2
2001	989,597[2]	

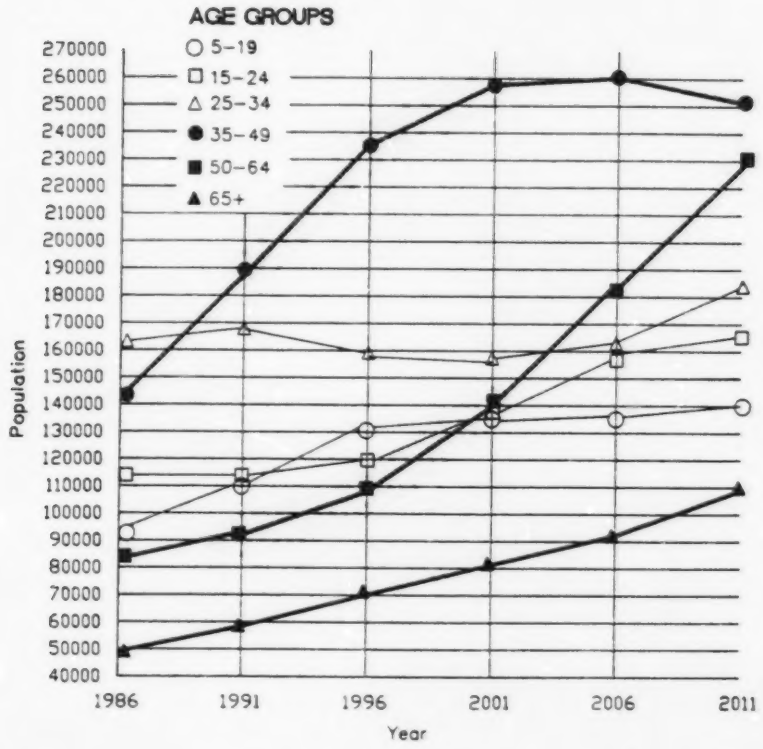
[1] Adjusted to reflect present CRPC area.

[2] Prospect '89 Population Report, Scenario 1: Medium Growth.

Sources: Calgary Regional Planning Commission, 1975, 1988, 1990.

The region's aging population structure has implications for recreation participation rates. Figure 1 shows the projected growth of age groups within the Calgary region. As shown in the highlighted area, the 35-49 and 50-64 year age groups grow rapidly between 1991 and 2001. Growth of these age groups represents aging of the baby boom generation or those individuals born between 1947 and 1966. The relatively large size of this generation suggests that at any point in time their recreation choices influence recreation growth rates.[4] The next section discusses how the baby boom generation is currently affecting recreation growth patterns.

Figure 1
GROWTH OF AGE GROUPS IN THE CALGARY REGION



Source: Calgary Regional Planning Commission

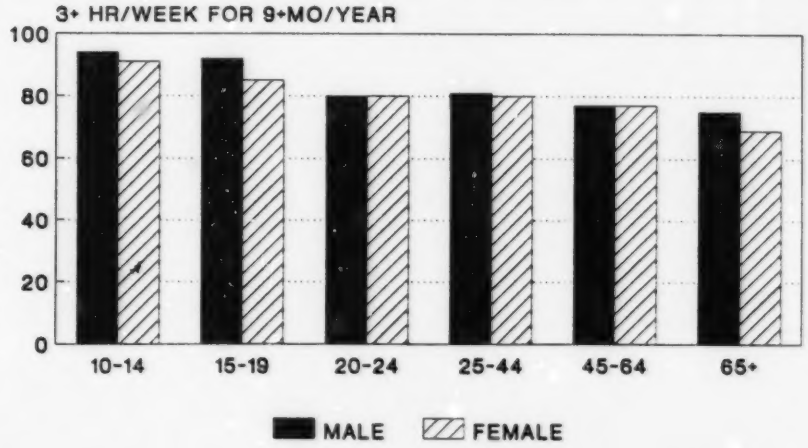
Current Recreation Trends

National, provincial and local surveys completed during the 1980s provide insights into two important factors - the typical effect aging has on recreation participation, and the recreation preferences of the baby boomers.

Figure 2 illustrates that people generally spend less time on physical recreation as they become older. The largest decline occurs between the 15-19 and the 20-24 year age group. In addition to spending less time on physical recreation people generally switch from scheduled, supervised and competitive activities to casual activities.[5]

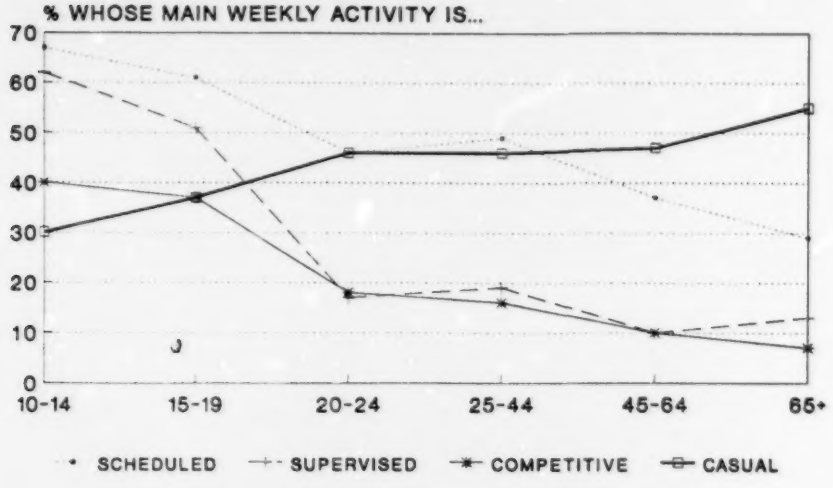
As illustrated in Figure 3 the percentage of people participating in highly structured (scheduled, supervised) activities decreases rapidly until about 22 years of age. This reflects the transition from late adolescence and secondary education to young adulthood. Generally, younger people choose more demanding team activities while older people choose more individual self-pacing activities.[6]

FIGURE 2
TIME SPENT ON PHYSICAL RECREATION
BY AGE AND SEX



SOURCE:CAMPBELL'S SURVEY ON WELL-BEING IN CANADA, 1988.

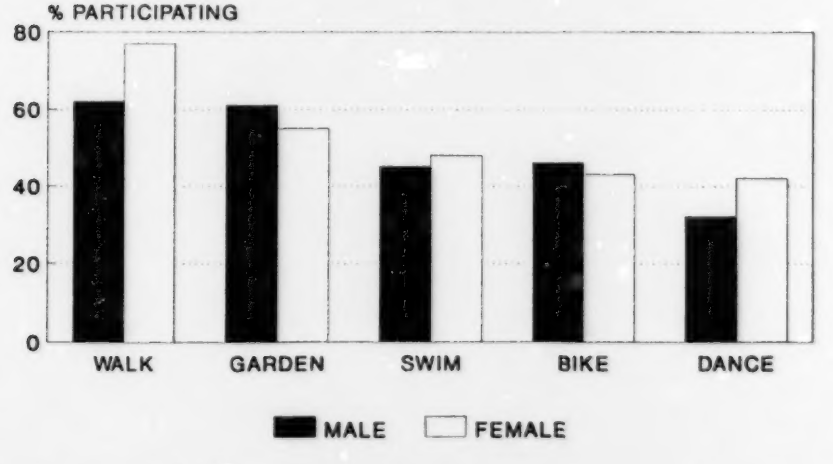
FIGURE 3
CHARACTERISTICS OF WEEKLY ACTIVITIES



SOURCE: CAMPBELL'S SURVEY ON WELL-BEING IN CANADA,1988

The five activities Canadian's participate in most frequently are shown in Figure 4 - walking, gardening, swimming, bicycling, and dancing. The popularity of these activities is consistent with the tendency to switch to casual, self-pacing activities. The typical location respondents cited for activity reflects the types of activities that are popular. For example, 30% of the respondents reported that they frequently recreate outdoors, in a park or undefined open space.[7]

FIGURE 4
PARTICIPATION IN FIVE ACTIVITIES BY SEX (AGE 10+)



SOURCE:CAMPBELL'S SURVEY ON WELL-BEING IN CANADA, 1988.

Provincial and regional surveys reveal activity patterns consistent with those at a national level. Surveys of Alberta's residents during the 1980s reveal that the most popular activities are unstructured in nature. Table 2 shows shifts in the rankings of various activities between 1981 and 1984. Activities that are stable and gaining in popularity are walking, bicycling, and golf, while activities decreasing in popularity are downhill skiing, tennis, softball, and ice hockey.

A City of Calgary survey completed in 1988 indicates that the most popular family activities are walking (40%), camping (21%), swimming (21%), bicycling (16%), and picnicking (16%). The study also found that participation in outdoor activities generally decreases as people grow older.[8]

Table 2
Change in the Percentage of Households in Alberta
Participating in Selected Activities

1981-1988

	1981	1988	%
Walking	88	89	+1
Bicycling	62	64	+2
Fishing	55	50	-5
Golf	35	40	+5
Softball	42	34	-8
Ice Hockey	28	22	-6
Tennis	31	20	-11
Football	24	11	-13
Downhill Skiing	36	34	-2

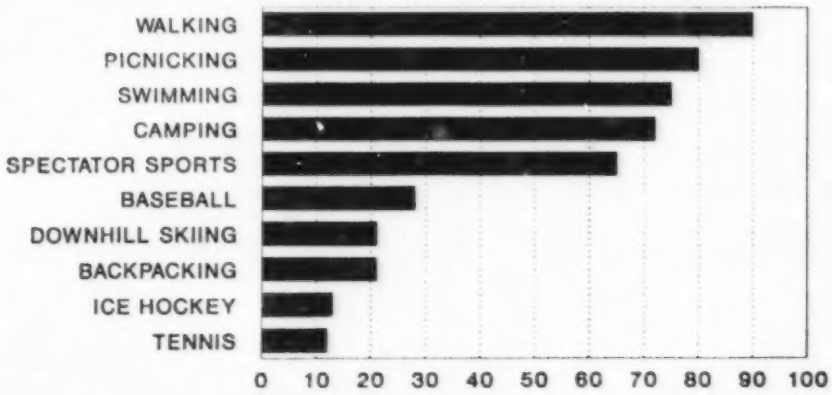
Source: Alberta Recreation and Parks.

Evidence indicated that bicycling is particularly popular in the Calgary region. Approximately one half of the Alberta Cycling Club's 1990 members reside in the Calgary area.[9] The Elbow Valley Cycling Club has 584 members, 66% of whom are over 30 years of age.[10] There are also four outdoor clubs that offer weekly bicycling tours for individuals over 55 years of age.[11]. Outdoor clubs for individuals over 55 years of age are also popular in Calgary. Eight clubs currently offer walking programs, day hikes, and cycling tours in and around the Calgary area and there are growing waiting lists for several of these clubs.[12] A survey of recreational activities in the Bow River Valley indicates that nearly 60% of day trips taken by Calgarians involve walking or bicycl-

ing.[13] Respondents reported the locations for day trips are as follows: 53% in the neighbourhood, 25% in the Bow River Valley, 13% in city parks, 2.9% in provincial parks, and 2% in communities near Calgary.[14]

Surveys carried out in other urban centres in the region reveal similar trends. Figure 5 illustrates Airdrie residents are more likely to participate in unstructured activities. The City's Recreation Master Plan identifies a continuing need to promote access and use of parks and open space to provide opportunities for participating in unstructured activities such as swimming, walking, camping, and bicycling. Continued development of a parkway system providing activity nodes for picnicking and play is also emphasized.[15]

FIGURE 5
FREQUENCY OF PARTICIPATION IN SELECTED ACTIVITIES - AIRDRIE,1986



SOURCE: CITY OF AIRDRIE, 1986

A survey completed for the Town of Okotoks in 1991 reveals similar recreation priorities. Residents cited the most important priorities are spaces for engaging in casual recreation activities such as walking and bicycling. The top three priorities are as follows:

1. an interconnecting pathway system,
2. the Sheep River Park pathway,
3. more spaces for passive outdoor recreation.[16]

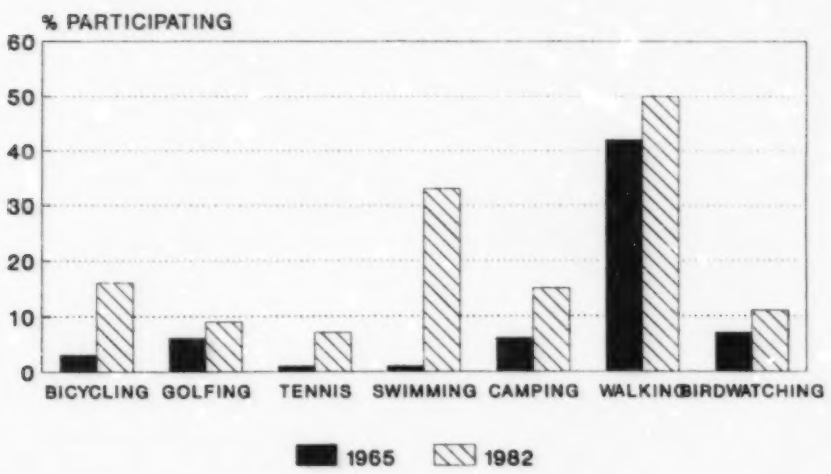
A review of national, provincial and regional surveys reveals a common trend in recreation. As the baby boom generation aged in the 1980s they favoured unstructured, less vigorous activities over more aggressive structured, activities. The next section discusses the continuation of this trend over the next decade.

The Next Decade 1991 - 2001

Recreation forecasters generally agree that recreation growth patterns in the 1990s will be much the same as in the 1980s. That is, continuing popularity of casual, relatively passive forms of outdoor activity.

A recent Canadian study projects growth rates for individual activities to the year 2011.[17] For the purposes of this study projected growth rates for the years 1991-2001 are considered. The projections are based on Statistics Canada population projections and National Recreation Survey (NRS) activity participation data collected in the Unites States.[18] Long term, consistent recreation participation data are not available for Canada. The NRS data reveal two interesting facts. Firstly, as discussed previously, participation in all outdoor recreation activities except birdwatching decreases as a person becomes older. These figures are shown in Table 3. Secondly, Figure 6 shows that individuals aged 46-64 are more active in 1982 in comparison to their counterparts in 1965. This change is the result of an increased emphasis on fitness, advances in medical technology and marketing directed at older age groups.[19] The activity growth projections shown in Table 4 are based on the participation rates shown in Table 3 and a population projection completed by Statistics Canada.

FIGURE 6
PARTICIPATION BY INDIVIDUALS AGED 45-64 YEARS, 1965 AND 1982



SOURCE:ROBINSON, 1987.

Table 3

United States National Recreation Survey

Outdoor Recreation Activity Participation Rate by Age

1982

(Percent of Total Survey Population)

Activity	12-17	18-24	25-44	45-64	65+	Total
RECREATION SPORTS						
Bicycling	69	43	35	16	6	32
Golfing	15	14	11	9	2	10
Horseback Riding	21	15	9	3	1	9
Tennis	30	33	15	7	-	16
WATER BASED						
Boating	29	29	26	15	8	22
Canoeing	15	13	9	4	1	8
Sailing	9	9	7	4	2	6
Swimming	80	67	55	33	11	53
Water Skiing	13	16	10	2	-	9
WINTER						
Ice Skating	21	9	6	1	-	6
Skiing	15	15	9	3	1	9
Sledding	30	16	11	2	-	10
NATURAL ENVIRONMENT						
Bird Watching	8	9	11	11	11	11
Camping	25	34	27	15	5	23
Fishing	46	39	37	27	16	34
Hiking	21	20	18	9	4	15
Hunting	25	34	27	15	5	23
Pleasure Walking	51	61	57	50	41	53
GENERAL						
Attend Concerts	31	37	28	19	12	25
Attend Sports	62	50	44	30	13	40
Picnicking	52	52	58	40	27	48
Pleasure Driving	34	58	56	45	32	48
Sightseeing	41	49	54	43	28	46

Source: Robinson (1987:36)

Table 4
Projected Outdoor Recreation
Activity Growth Rates for Canada

(Percent Change per Decade)

Recreation Activity		1991-2001	2001-2011
1.0	**RECREATION SPORTS**	Average 6.2	2.6
1.1	Bicycling	6.2	2.3
1.2	Golfing	8.8	5.4
1.3	Horseback Riding	4.8	1.0
1.4	Tennis	5.1	1.8
2.0	**WATER BASED**	Average 7.1	3.5
2.1	Boating	7.9	4.4
2.2	Canoeing	5.8	2.2
2.3	Sailing	7.5	4.1
2.4	Swimming	7.5	3.9
2.5	Water Skiing	3.4	-0.4
3.0	**WINTER**	Average 3.8	-0.2
3.1	Ice Skating	3.2	-1.1
3.2	Skiing	4.9	1.3
3.3	Sledding	3.3	-0.9
4.0	**NATURAL ENVIRONMENT**	Average 9.7	6.3
4.1	Birdwatching	12.7	9.4
4.2	Camping	7.3	3.9
4.3	Fishing	9.2	5.8
4.4	Hiking	7.0	3.4
4.5	Hunting	9.7	6.3
4.6	Pleasure Walking	11.0	7.8
5.0	**GENERAL RECREATION**	Average 9.0	6.2
5.1	Attend Concerts	8.7	5.5
5.2	Attend Sports	8.4	4.9
5.3	Picnicking	9.5	6.0
5.4	Pleasure Driving	10.5	7.3
5.5	Sightseeing	10.4	7.0
6.0	**TOTAL POPULATION GROWTH**	9.8	7.1

Note: Averages do not compute exactly due to rounding.

Source: Foot, 1990

Although participation rates may decline due to less participation by an older population it is still possible for growth in the number of participants to occur. This occurs when population growth is greater in absolute magnitude than the decline in the activity participation rate. This is true of the activity growth projections discussed here. Table 4 illustrates projected outdoor recreation activity growth rates for twenty-three outdoor activities.

Generally all of the activities show growth, suggesting population increase is greater than declining participation rates. In fact growth rates in the 1991 to 2001 period exceed those between 2001-2011. This suggests that participation rates do not decline significantly until the year 2001.

Generally activities at the top of the table have lower growth rates than those at the bottom, with the exception of golfing and boating. The slowest rate of growth occurs for winter activities and recreational sports, followed by water-based recreation activities. Future recreation growth is more likely to occur in natural environment and general recreation activities. The strongest growth among natural environment activities occurs for birdwatching, fishing, hunting, and pleasure walking. In the category of general recreation, high rates of growth occur for pleasure driving, sightseeing and picnicking. Activities such as birdwatching, pleasure walking, pleasure driving and sightseeing grow more rapidly than the total population. These projections suggest that in their 40s, the baby boom generation will continue to participate in passive, unstructured recreational activities, rather than more vigorous sports such as skiing and tennis.

Projected recreation activity growth in the United States suggests a similar pattern over the next decade;[20] that is, a continuing shift to more passive forms of interaction with the natural environment. For example, activities expected to experience steady growth include walking, bicycling, camping, fishing, birdwatching, and golf.

City of Calgary studies predict similar trends in the 1990s. The Priorities Plan forecasts a continuing interest in individual sports and environmental activities such as nature photography and birdwatching. Activities requiring linear facilities such as walking, hiking, and bicycling are also expected to remain popular.[21]

Summary

National forecasts and local surveys indicate the types of recreation activities that will experience growth over the next decade in the Calgary region.

In general, growth in outdoor activities is expected for the following reasons: firstly, total population growth of about 22% is expected in the region. In comparison, the total national population growth rate of 9.8% results in activity growth rates of more than 3% for the majority of activities. Secondly, participation in recreation activities does not decrease significantly for individuals in their 40s and this will be one of the fastest growing age groups in the region.

The same activities will be popular in the 1990s as in the 1980s; specifically, summertime, unstructured, relatively passive activities such as walking, bicycling, birdwatching, golf, and pleasure driving. Activities expected to experience the lowest rates of growth are winter activities and those associated with the young, including ice skating, sledding, and water skiing, followed by horseback riding, tennis, and skiing. The next section of this paper discusses policy implications arising from these findings.

SOME IMPLICATIONS FOR LOCAL AUTHORITIES

The trends discussed in the foregoing sections have important implications for those formulating outdoor recreation, environmental, and tourism development policies. The following paragraphs discuss implications for each policy area in general terms, while recognizing that these areas may overlap. Over the next decade there will be a continuing emphasis on natural environment based recreation for adults. This implies a need to maintain and expand spaces for adult recreation activities. Secondly, general recreation activities such as pleasure driving, sightseeing, and picnicking are popular adult activities. Growth of these activities indicates opportunities for local tourism development programs.

Outdoor Recreation and Land Use Planning

The first part of this discussion comments on the implications for urban municipalities and the second part focuses on the implications for rural municipalities.

Development of parks and pathway systems is considered to be a high priority in urban recreation and parks master plans completed in the 1980s. These priorities will continue to be important over the next decade. Two issues arising from these priorities are development of existing open space and acquisition of new open spaces. It is important to assess the level of use and quality of existing open spaces. This assessment will indicate whether existing open spaces are being used to the fullest potential. Under-utilized open spaces can be upgraded to encourage greater use. Amenities that add to the attractiveness of open space include access and parking, walking and bicycling paths, benches and picnic areas, and trees.

A biophysical and land ownership inventory provides important information for selecting natural areas for future park acquisition and development. In addition, the changing demand for particular types of spaces should be assessed by examining the changing age structure. Currently, tot lots are becoming relatively less important while adult parks are becoming more important. Linear park systems for adult activities have special requirements such as acquisition of public space, pathways, rest stops, and activity nodes.

Conservation areas are also expected to become increasingly important components in urban open space systems. Conservation areas can be used for recreational and educational purposes. It is important to develop such areas to allow for these uses, while maintaining the natural habitat. This issue is considered in more detail under the heading of environmental planning.

Over the next decade there will be continuing pressure on rural municipalities to acquire and develop open space for recreational purposes. This goal is difficult to achieve in rural municipalities for two reasons. Firstly, there are several recreation boards operating separately in each rural municipality. Secondly, subdivision in rural municipalities is not contiguous which makes it difficult to acquire large reserves of public land. Inter-municipal agreements can be used to address the need for large open spaces and linear open space systems in rural situations. Municipal reserve funds may also be built up to acquire larger parcels of land for public open space.

In the past, rural pathways have been established through joint agreements with organizations owning suitable tracts of land for linear recreational uses. For example, the Black Diamond - Turner Valley pathway was developed through joint agreement between Alberta Transportation, Black Diamond, and Turner Valley. The pathway is on an Alberta Transportation right-of-way beside Highway 22. The Black Diamond - Turner Valley Joint Recreation Board oversees maintenance of the path which was initially paved by Alberta Transportation. Maintenance is funded from both towns' budgets and special amenities such as benches are financed through public fund raising programs.

There are several groups proposing pathway development in rural municipalities. These groups generally represent country residential developments, hamlets, or urban centres. Noting that the status of the proposals may change, the following is a list of pathways that have been proposed: Bragg Creek to Kananaskis Country, Redwood Meadows to Bragg Creek, Calgary to Cochrane, Shepard to Irricana, and Strathmore to Eagle Lake.

The Chinook Trails Association is also lobbying for regional trail development. This organization is currently focusing its efforts on lobbying for a non-motorized trail between Calgary and Cochrane, along the Bow River. The Association's position emphasizes the value of the trail to both urban and rural residents in terms of recreation use and enhanced values in the immediately adjacent rural areas.

Future trends in regional population growth and activity preferences seem likely to raise the larger issue; that is the evolution of open space systems between adjoining municipalities. A large degree of cooperation among those concerned will be required to accomplish this goal.

Environmental Planning

The popularity of natural environment based activities provides opportunities to increase public awareness with respect to the importance of natural areas in the region. It is important for the public to be aware of the wide variety of natural areas in the region and the importance of preserving these areas for recreation and for the environment itself. For the purposes of this discussion, the term natural area refers to provincially designated Natural Areas, provincial parks and Environmentally Sensitive Areas (ESAs). The first two types of natural areas are already used for recreation purposes such as walking, picnicking and in some cases camping. The region's ESAs represent potential additional sites for recreation, and public pressure for such use may well increase. However, it is important to note that conservation of the natural environment should be the primary concern when considering such areas for recreation use. Additional research is needed with respect to the following: the capability of each area to support recreation, the potential for the site to become a link in a larger open space system, current use of the area, and the relative environmental significance of the area.

The majority of the ESAs are located in the Region's river valleys. River valleys are also prime sites for recreation and important features in open space systems. As mentioned in the previous section, there is pressure to develop a pathway in the Bow River Valley for non-motorized recreation activities.

There may also be opportunities to preserve important ESAs outside of the region's river valleys for recreational and educational use. Examples of prairie areas that have been purchased for recreational use include Nosehill Park in Calgary.

The consideration of natural areas for recreation at a broader level will require cooperation among rural and urban municipalities, environmental groups, recreation interest groups and the provincial government.

Municipal Tourism Development

General recreation activities such as driving for pleasure, sightseeing and picnicking are popular outdoor activities for adults. Local tourism development strategies may find opportunities for attracting people who are driving for pleasure on weekends. In the area of summertime outdoor recreation, popular activities are walking, bicycling, nature observation, golfing, and attending concerts, and sports. This suggests that individuals may wish to combine a drive with an active outdoor pursuit such as a walk or watching a unique sports event or concert. Local tourism development committees should assess which of their assets may attract visitors if developed and promoted successfully. Evidence suggests that nearby natural parks are valuable attractions especially if they represent unique wildlife and natural features.

The possibility of providing routes between municipalities for bicycling tours has great potential for local economic development. These tours may involve day trips or overnight stops. Golf courses will also attract golfers from across the region providing additional support for local tax bases. The growth of pleasure driving over the next decade also increases the probability of attracting visitors from across the region.

CONCLUSION

This report has identified certain outdoor recreation trends that will influence recreation, land use and tourism policy formulation over the next decade. Of particular importance is growth in summer activities, especially natural environment based and general recreation activities. It is important to note that these trends represent a continuation of current recreation patterns.

In the context of these trends those concerned with policy formulation face some issues and opportunities:

- Continued development of high quality open space and additional open space for adult recreation activities.

- Less emphasis on facility based activities for the younger set such as tennis and tot lots. These facilities require relatively expensive maintenance in comparison to natural parks.

- Preservation of the region's natural areas for recreational and educational purposes may become more important. Recreation use provides an additional incentive for maintaining natural areas in the region.

- The growing pleasure driving market provides opportunities for municipalities to attract visitors. Pleasure driving in conjunction with an outdoor activity will be popular.

- The formulation of joint agreements between those concerned with open space development will become more important.

Some of the issues arising from growth in resource based activities and pleasure driving include:

- The need for additional research regarding the impact of recreation uses on natural environments.

- The need for open space development funding in times of slow economic growth and government retrenchment.

Steady population growth will lead to growth in recreation activity over the next decade. However, as the population continues to age after the year 2001, growth prospects are less certain. National projections indicate decreasing growth rates after the year 2001.

REFERENCES

1. Robinson John P., "Where's The Boom", in American Demographics, March 1987 (pp. 34-56).

2. Ibid.

3. Calgary Regional Planning Commission, Prospect 1989: Population Report (Scenario 1, Constant Fertility, Average Migration).

4. Foot David K., "The Age of Outdoor Recreation in Canada", in Recreation Canada, December 1990 (pp. 16-22).

5. Stephens T., and Craig C.L., The Well-Being of Canadians: Highlights of the Campbells Survey, Canadian Fitness and Lifestyle Research Institute, 1990.

6. Ibid.

7. Ibid.

8. Allison J. and Hutchinson M., "Calgary Data: 1984 Public Opinion Survey", City of Calgary Parks and Recreation Department, 1986.

9. Allison Holgate, Alberta Cycling Association, Interview, September 16, 1990.

10. Cadence, Journal of the Elbow Valley Cycle Club, Elbow Valley Cycle Club, December, 1990.

11. Calgary Herald, August 1990.

12. Ibid.

13. Reid Crowther and Partners Ltd. Bow River Recreation Study: An Assessment of Recreational Use and Economic Benefits: Volume 4: Household Survey, Resource Evaluation and Planning Branch, Alberta Forestry, Lands and Wildlife, Calgary 1987.

14. Ibid.

15. City of Airdrie, City of Airdrie and Regional Recreation District Master Plan, 1986.

16. Town of Okotoks, Town of Okotoks: Recreation and Parks Development Plan, 1991.

17. Foot, op cit.

18. Robinson, op cit.

19. Warnick, R.B. "Recreation and Leisure Participation Patterns Among Adult Middle-Aged Market from 1975 to 1984". Journal of Physical Education, Recreation, and Dance. Vol 58, No. 8.

20. Kelly J.R., "Recreation Trends: Toward The Year 2000. Management Learning Laboratories Ltd. Champaign, Illinois, 1987.

21. City of Calgary, Policies and Priorities, 1988-1992, 1988.